

## MTS Table Top Load frame

The Non-destructive Evaluation group operates an MTS Table Top Load frame for ultimate strength and life cycle testing of various ceramic, ceramic-matrix (FGI), carbon, carbon fiber, cermet (CMC) and metal alloy engineering samples. The load frame is a servo-hydraulic type designed to function in a closed loop configuration under computer control. The system can perform non-cyclic, tension, compression and flexure testing and cyclic fatigue tests.

The system is comprised of two parts:

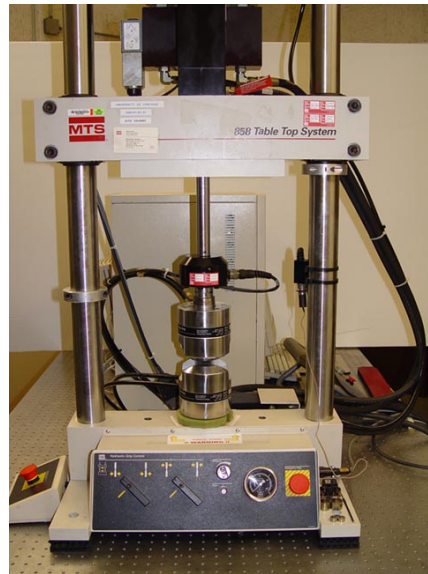
- The Load Frame and
- The Control System.

### Load Frame

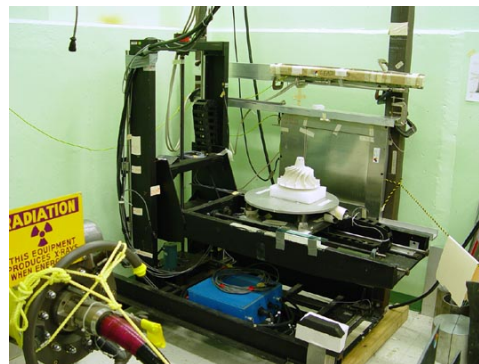
The Load Frame (figure 1) is a cross-head assembly which includes a single moving grip, a stationary grip and LVDT position sensor. It can generate up to 25 kN (5.5 kip) of force in the sample under test and can execute a maximum of 102 mm (4 in.) stroke. The force is generated by a hydraulic pump (not shown) which can develop up to 3000 psi in the working fluid.

### Control System

The Control system is composed of a computer and a remote control station (figure 2), interface electronics (not shown), and the control software. The system can perform cyclic (fatigue) and non-cyclic (tension, compression, flexure) testing using a variety of displacement, load and strain instrumentation. The sample under test may be further instrumented with Acoustic Emission instrumentation for detection and observation of the acoustic signatures associated with sample failure.



MTS Model 858 Table Top Load Frame



MTS Testar II's Control Computer and Remote Control Station

For additional information, please visit:  
<http://www.ne.anl.gov>, or  
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